

MAXIMUM CIRCUIT VALUES

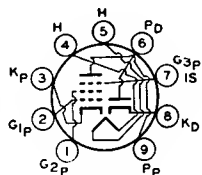
- Grid-Circuit Resistance:
 For cathode-bias operation 1.0 megohm
 For fixed-bias operation Not recommended
- As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.
- The duration of the voltage pulse must not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

6AS7GA

Refer to chart at end of section.

6AS8**DIODE—
SHARP-CUTOFF PENTODE**

Miniature type used in television and radio receiver applications. The pentode unit is used as an if amplifier, video amplifier, or age amplifier. The high-perveance diode is used as an audio detector, video detector, or dc restorer. Outlines section, 6B; requires miniature 9-contact socket. For curve of average plate characteristics of pentode unit, see type 6AN8A.

**9DS**

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.45	ampere
Heater Warm-up Time (Average)	—	seconds
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances:		
Diode Unit:		
Plate to Cathode, Heater, Pentode Grid No.3, and Internal Shield	3	pF
Pentode Unit:		
Grid No.1 to Plate	0.03	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	7	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	2.4	pF
Pentode Grid No.1 to Diode Plate	0.005 max	pF
Pentode Plate to Diode Cathode	0.15 max	pF
Pentode Plate to Diode Plate	0.10 max	pF

Pentode Unit as Class A₁ Amplifier**MAXIMUM RATINGS (Design-Center Values)**

Plate Voltage	300	volts
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0	volts
Grid-No.2 Supply Voltage	300	volts
Grid-No.2 (Screen-Grid) Voltage	See curve page 300	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	volts
Plate Dissipation	2.5	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 150 volts	0.5	watt
For grid-No.2 voltages between 150 and 300 volts	See curve page 300	

CHARACTERISTICS

Plate Supply Voltage	200	volts
Grid No.3	Connected to cathode at socket	
Grid-No.2 Supply Voltage	150	volts
Cathode-Bias Resistor	180	ohms
Plate Resistance (Approx.)	300000	ohms
Transconductance	6200	μmhos
Plate Current	9.5	mA
Grid-No.2 Current	3	mA
Grid-No.1 Voltage (Approx.) for plate current of 10 μA	—8	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25	megohm
For cathode-bias operation	1	megohm

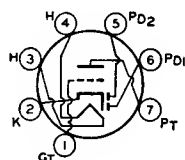
Diode Unit

MAXIMUM RATINGS (Design-Center Values)

Peak Inverse Plate Voltage	330	volts
Peak Plate Current	50	mA
Average Plate Current	5	mA

Refer to chart at end of section.

6AS11



7BT

TWIN DIODE—
HIGH-MU TRIODE

6AT6

12AT6

Miniature type used as a combined detector, amplifier, and avc tube in automobile and ac-operated radio receivers. Outlines section, 5C; requires miniature 7-contact socket. For typical operation as resistance-coupled amplifier refer to Resistance-Coupled Amplifier section. Type 12AT6 is identical with type 6AT6 except for heater ratings.

Heater Voltage (ac/dc)	6.3	12.6	volts
Heater Current	0.3	0.15	ampere
Peak Heater-Cathode Voltage	±90 max	±90 max	volts
Direct Interelectrode Capacitances:			
Triode Grid to Triode Plate		2	pF
Triode Grid to Cathode and Heater		2.2	pF
Triode Plate to Cathode and Heater		0.8	pF
Plate of Diode Unit No.2 to Triode Grid		0.04 max	pF

Triode Unit as Class A₁ Amplifier

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	300	volts
Plate Dissipation	0.5	watts
Grid Voltage, Positive-bias value	0	volts

CHARACTERISTICS

Plate Voltage	100	250	volts
Grid Voltage	—1	—3	volts
Amplification Factor	70	70	
Plate Resistance	54000	58000	ohms
Transconductance	1300	1200	μmhos
Plate Current	0.8	1	mA

Diode Units

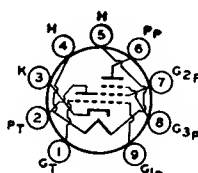
MAXIMUM RATING (Design-Center Value)

Plate Current (Each Unit)	1	mA
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The two diode plates are placed around a cathode whose sleeve is common to the triode unit. Each diode plate has its own base pin. For diode operation curves, refer to type 6AV6.

Refer to chart at end of section.

6AT8



9DW

MEDIUM-MU TRIODE—
SHARP-CUTOFF PENTODE

6AT8A

5AT8

Miniature types used as combined oscillator and mixer tubes in television receivers utilizing an intermediate frequency in the order of 40 MHz. Outlines section, 6B; requires miniature 9-contact socket. Except for interelectrode capacitances and basing arrangement, this type is identical with miniature type 6X8. The basing

arrangement is particularly suitable for connection to the coils of certain designs of turret tuners. Type 5AT8 is identical with type 6AT8A except for heater ratings.